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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,471	07/24/2003	Michael Feltsman	006452/P1	1310

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EXAMINER

VERSTEEG, STEVEN H

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,471

Applicant(s)

FELTSMAN, MICHAEL

Examiner

Steven H VerSteeg

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14 and 17-21 is/are allowed.
- 6) ☒ Claim(s) 22, 24-29 and 31 is/are rejected.
- 7) ☒ Claim(s) 15, 16 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/25/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: IDS mailroom date 8/30/04 & 2/20/04.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **428** [0047].

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: please insert the patent number for the parent application at [0001].

Appropriate correction is required.

Claim Objections

3. Claims 15, 16, 28, and 29 are objected to because of the following informalities:

"wherein post" should be "wherein the post" in claims 15 and 28 at lines 1 and 1 respectively.

Claims 16 and 29 depend from claims 15 and 28 respectively and contain all of the limitations of the claims from which they depend. Thus, claims 16 and 29 are objected to for the same reasons as claims 15 and 28 respectively. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 24-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 24 recites the limitation "the center pad" in line 1. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 25 recites the limitation "the disk body" in line 1. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 26 recites the limitation "the center pad" in line 2. There is insufficient antecedent basis for this limitation in the claim.

9. Claims 27-29 depend from claim 26 and contain all of the limitations of claim 26.

Therefore, claims 27-29 are rejected for the same reasons as claim 26.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 22 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,223,112 to Tepman.

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12. For claim 22, Applicant requires a PVD chamber comprising a chamber body having sidewalls and a bottom defining a process volume; a shutter disk mechanism at least partially disposed in the process volume and having a robot blade and a shutter disk engaged by an alignment feature, the alignment feature disposed along a center axis of the shutter disk; a slot formed through one of the sidewalls; and a housing sealingly coupled to the chamber body.

13. Tepman discloses a removable shutter apparatus for use in a deposition apparatus (abstract) such as a sputter apparatus (Figure 2). The apparatus comprises a chamber body with sidewalls and bottom, slot in one of the sidewalls; and a housing sealing coupled to the chamber body (Figure 2). The apparatus also comprises a shutter disk mechanism comprising a robot blade 51 and robot arm (col. 3, l. 10-14) and an alignment feature along the center axis of the shutter disk (Figure 2).

14. For claim 31, Applicant requires a method for positioning a shutter disk within a PVD chamber having a substrate support comprising spacing a shutter disk vertically from a substrate support; moving a robot blade between the substrate support and the shutter disk; and engaging the shutter disk and the robot blade with an alignment feature disposed along a center axis of the shutter disk.

15. The shutter disk is spaced from the substrate; the robot engages the shutter blade with the alignment feature (Figure 2; col. 3, l. 37-66).

Allowable Subject Matter

16. Claims 1-14 and 17-21 are allowed.

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17. Claims 23, 30, and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. Claims 24-29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

19. Claims 15, 16, 28, and 29 would be allowable if written to overcome the claim objection presented above.

20. The following is a statement of reasons for the indication of allowable subject matter: it is neither anticipated nor obvious over the prior art of record to have a shutter disk as claimed by Applicant in claims 1 or 6; or a physical vapor deposition chamber as claimed by Applicant in claims 7 or 23; or a method for positioning a shutter disk within a physical vapor deposition chamber having a substrate support as claimed by Applicant in claim 32.

21. US 2002/0088771 A1 to Hixson et al. (Hixson) discloses a shutter in a PVD system, but the shutter does not have a center pad extending from the lower surface of the shutter disk to have center portions in a spaced apart relation from the substrate support while the perimeter of the shutter disk is on the perimeter of the substrate support.

22. US 6,176,978 B1 to Ngan discloses a PVD deposition chamber (Figure 1B) comprising a shutter disk 33 that moved between a position in front of the substrate and a position not covering the substrate (col. 3, l. 44-58). Ngan does not use a sensor that is oriented to detect the presence of the shutter.

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23. US 6,051,113 to Moslehi has a rotating shutter disk, but it is located within the main chamber and does not have a sensor that is oriented to detect the position of the shutter (Figure 8).

24. US 5,980,194 to Freerks et al. (Freerks) discloses a system with a detection system for determining the presence of a wafer (abstract), but the sensor does not detect the location of a sensor.

25. US 5,844,683 to Pavloski et al. (Pavloski) discloses a system that detects the position of the substrate holder (abstract), but there is no detection of a shutter.

26. US 5,483,138 to Shmookler et al. (Shmookler) discloses a system for determining the center point of a substrate (abstract), but the system does not detect the location of a shutter.

Therefore, no reference individually teaches all of the limitations claimed by Applicant.

Modifying either Ngan or Moslehi with Freerks, Pavloski or Shmookler would not result in Applicant's claimed invention. The resulting invention would be a system with a shutter and a sensor for detecting the center point of the substrate or the location of the substrate. There would be no detection of the shutter unless hindsight reasoning is utilized.

General Information

For general status inquiries on applications not having received a first action on the merits, please contact the Technology Center 1700 receptionist at (571) 272-1700.

For inquiries involving Recovery of lost papers & cases, sending out missing papers, resetting shortened statutory periods, or for restarting the shortened statutory period for response, please contact Denis Boyd at (571) 272-0992.

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For general inquiries such as fees, hours of operation, and employee location, please contact the Technology Center 1700 receptionist at (571) 272-1300.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H VerSteeg whose telephone number is (571) 272-1348. The examiner can normally be reached on Mon - Thurs (6:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven H VerSteeg
Primary Examiner
Art Unit 1753

shv
March 29, 2005